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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/714,525
Filing Date: November 14, 2003
Appellant(s): MARCKEN ET AL.

DENIS G. MALONEY
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 24, 2010 appealing from the Office action mailed November 6, 2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application: 21-76.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

Patent Documents:

6,275,808	DEMARCKEN, et al.	8-2001
2003/0191725	RATLIFF, et al.	10-2003

Non-Patent Literature:

"Star Alliance Touts World Fares," Travel Trade Gazette Asia (Dialog copy), July 23, 1999, 2 pgs.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 57-62 and 68-76 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 57-62 and 68-76 are directed to a series of steps. Processes are eligible for patent protection under 35 U.S.C. § 101 if they are not directed to an abstract idea. *See Bilski v. Kappos*, 95 USPQ2d 1001 (U.S. 2010) (clarifying the standards for subject matter eligibility). A claimed process is not directed to an abstract idea if it is tied to a particular machine or apparatus or it transforms a particular article into a different state or thing. *See Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Diamond v. Diehr*, 450 U.S. 175, 192 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Cochrane v. Deener*, 94 U.S. 780, 788 (1876). So, to clearly qualify as patent eligible, claimed

processes may positively recite the machine used to perform the process (e.g., by identifying the apparatus that accomplishes the method steps), or positively recite the subject matter that is being transformed (e.g., by identifying the product or material that is changed to a different state).

In this case, the claims do recite a computer to perform some of the initial steps, however these steps only constitute insignificant pre-solution gathering activities. They do not serve to tie the entire process to a particular machine or place meaningful limits on what apparatus must be used to generate the solutions. And while the claimed invention is related to actual travel itineraries, no step is actually implemented to affect a physical transformation in the real world. Rather, the claims merely recite the manipulation of abstract data elements. Thus, the claims fail the machine-or-transformation test, and there is no clear evidence from which to conclude that the claims are not principally drawn to an abstract idea. Based upon consideration of all the relevant factors with respect to the claim as a whole, they are deemed to claim an abstract idea and are rejected under § 101.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 21-50 and 63-76 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 recites "determine constraints on sequences of flights between the endpoints of the trip segments" and subsequently recites "generate itineraries of sequences of flights using the constraints to select which flights to include in the sequences of flights of the generated itineraries." This language is unclear. It seems as though the constraints are determined from sequences of flights, which themselves are subsequently determined from their constraints. The circular nature of these limitations makes the relationship between the recited elements unclear and does not properly

apprise the public as to what would constitute infringement. Claims 41, 63, and 68 contain similar recitations. Dependent claims inherit the above deficiencies through of their respective base claims and, as such, are rejected for the same reasons.

Claim 40 recites the limitation "price the additional itineraries generated without considering the constraints and with considering the constraints" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim. It is also unclear how the same itineraries could be generated by both considering and not considering the constraints. For examination purposes Examiner will consider this to refer to different itineraries; however the language should be clarified to reflect Applicant's intent.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 21-29, 32-47, and 50-76 are rejected under 35 U.S.C. 102(b) as being anticipated by DeMarcken, U.S. Pat. No. 6,275,808 (Reference A of the PTO-892 part of paper no. 20091028).

As per claim 21, DeMarcken teaches a computer product to cause a computer to: receive trip segments (col. 4, lines 28-33); determine constraints on sequences of flights between the endpoints of the trip segments, the constraints derived from fares between the end points of the trip segments, which can be used with the flights to connect the end points of the trip segments (col. 9, lines 20-30, 61-67); generate itineraries of sequences of flights using the constraints to select which flights to include in the sequences of flights of the generated itineraries (col. 10, lines 1-10, 25-40; col. 61, lines 56-62); and price the itineraries (col. 3, line 45; col. 11, lines 1-4).

As per claims 22, 42, 52, 58, DeMarcken further teaches the constraints are on flights (col. 4, line 36).

As per claims 23, 43, 53, 59, DeMarcken further teaches the constraints are on itineraries (col. 4, line 35).

As per claims 24, 44, 54, DeMarcken further teaches the fares are fares between endpoints of trip segments (col. 4, line 7).

As per claims 25, 45, 55, DeMarcken further teaches fares are fares between points connected by single flights to endpoints of trip segments (Table 2).

As per claim 26, DeMarcken further teaches itineraries for a complete trip (Table 2).

As per claim 27, DeMarcken further teaches providing itineraries for each trip segment (col. 4, lines 35-37).

As per claims 28, 46, 60, DeMarcken further teaches the constraints are fare routings (col. 9, lines 64-66).

As per claims 29, 47, DeMarcken further teaches constraints are based on fare carrier (col. 23, lines 32-36)

As per claims 32, 61, DeMarcken further teaches the constraints are restrictions on individual flights (col. 9, lines 61-66).

As per claims 33, 50, 56, 62 DeMarcken further teaches the constraints are on airline and origin and destination triples (Table 2).

As per claim 34, DeMarcken further teaches the constraints are restrictions on origin and destination, (col. 17, lines 57-67; Table 13).

As per claim 35, DeMarcken further teaches the constraints based on price (col. 10, lines 8-10).

As per claim 36, DeMarcken further teaches generating additional itineraries without considering the constraints (Table 27—fare component set2 without rules).

As per claim 37, DeMarcken further teaches pricing additional itineraries without considering constraints (Table 27—fare component set2 without rules), and returning the additional priced itineraries (col. 60, lines 55-64).

As per claim 38, DeMarcken further teaches restricting pricing of itineraries based on constraints used to produce the itineraries (col. 10, line 63 – col. 11, line 6).

As per claim 39, DeMarcken further teaches restricting pricing of itineraries is based restrictions on the endpoints of fares considered during pricing (col. 10, lines 28-34).

As per claim 40, DeMarcken further teaches generating additional itineraries without considering the constraints (Table 27—fare component set2 without rules) pricing the additional itineraries from flights without considering the constraints (Table 27—fare component set2 without rules) and with considering the constraints and returning the priced additional itineraries (col. 60, lines 55-64).

As per claim 41, DeMarcken teaches a processor (col. 3, lines 34-39); a memory for executing a computer program product (col. 3, lines 34-39); receive trip segments (col. 4, lines 28-33); determine constraints on sequences of flights between the endpoints of the trip segments, the constraints derived from fares between the end points of the trip segments which can be used with the flights (col. 9, lines 20-30, 61-67); generate itineraries of sequences of flights using the constraints to select which flights to include in the sequences of flights of the generated itineraries (col. 10, lines 1-10, 25-40; col. 61, lines 56-62); and price the itineraries (col. 3, line 45; col. 11, lines 1-4).

As per claim 51, DeMarcken teaches a computer program product for causing a computer to: receive trip segments (col. 4, lines 28-33); determine geographic and airline constraints derived from available fares to control the manner in which flights are combined prior to evaluation of fare rules (col. 10, lines 25-34; Table 3); generate itineraries from flights using the constraints (col. 10, lines 25-40, line 66 – col. 11, line 6).

As per claim 57, DeMarcken teaches receiving, by a computer, trip segments (col. 4, lines 28-33); determining, by a computer, geographic and airline constraints derived from available fares to control the manner in which flights are combined prior to

evaluation of fare rules (col. 10, lines 25-34; Table 3); generating itineraries from flights using the constraints (col. 10, lines 25-40, line 66 – col. 11, line 6).

As per claim 63, DeMarcken teaches a computer program product for causing a computer to: receive trip segments (col. 4, lines 28-33); determine constraints on sequences of flights between the endpoints of the trip segments, the constraints derived from fares between the end points of the trip segments, which can be used with the flights (col. 9, lines 20-30, 61-67); generate itineraries of sequences of flights constrained by multiple constraints that are derived from a diverse set of fares in order to increase the diversity of generated itineraries using the multiple constraints to select which flights to include in the sequences of flights of the generated itineraries (col. 10, lines 1-10, 25-40; col. 61, lines 56-62); and return at least some of the generated itineraries to the user (col. 60, lines 55-64).

As per claims 64, 69, DeMarcken further teaches multiple airlines (Table 3).

As per claims 65, 70, DeMarcken further teaches multiple origins (Table 3).

As per claims 66, 71, DeMarcken further teaches multiple destinations (Table 3).

As per claims 67, 72, DeMarcken further teaches multiple origin-destination pairs (Table 2).

As per claim 68, DeMarcken teaches receiving, by a computer, trip segments (col. 4, lines 28-33); determining, by a computer, constraints on sequences of flights between the endpoints of the trip segments, the constraints derived from fares between the end points of the trip segments, which can be used with the flights to connect the end points of the trip segments (col. 9, lines 20-30, 61-67); generating itineraries of sequences of flights constrained by multiple constraints that are derived from a diverse set of fares in order to increase the diversity of generated itineraries using the multiple constraints to select which flights to include in the sequences of flights of the generated itineraries (col. 10, lines 1-10, 25-40; col. 61, lines 56-62); and returning at least some of the generated itineraries to the user (col. 60, lines 55-64).

As per claim 73, DeMarcken further teaches fares are filtered based on properties of the fare rules (col. 15, lines 41-44).

As per claim 74, DeMarcken further teaches fares fail if aspects of the fare's rules are violated (col. 15, lines 41-44).

As per claim 75, DeMarcken further teaches aspects of the fare's rules are effective and discontinue dates (col. 16, lines 11-22).

As per claim 76, DeMarcken further teaches aspects of the fare's rules limit at least one of travel dates and travel times (col. 17, lines 10-13).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 30 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeMarcken in view of Ratliff, et al., U.S. Pat. Pub. No. 2003/0191725 (Reference B of the PTO-892 part of paper no. 20091028).

As per claims 30 and 48, DeMarcken does not explicitly teach the constraints based on global fare indicator; which is taught by Ratliff (Table 1). It would have been prima facie obvious to one having ordinary skill in the art at the time of invention to incorporate these constraints because, as shown by Ratliff, they are old and well known in the reservations art. In the combination, no element would have served a purpose other than it already did independently, and one skilled in the art would have recognized that the combination could be implemented through routine engineering producing predictable results.

Claims 31 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeMarcken in view of the Travel Gazette (Reference U of the PTO-892 part of paper no. 200703).

As per claims 31 and 49, DeMarcken does not explicitly teach the constraints based on fare maximum permitted mileage; which is taught by Travel Gazette (pg. 1). It would have been prima facie obvious to one having ordinary skill in the art at the time of invention to incorporate these constraints because, as shown by Travel Gazette, they are old and well known in the reservations art. In the combination, no element would have served a purpose other than it already did independently, and one skilled in the art would have recognized that the combination could be implemented through routine engineering producing predictable results.

(10) Response to Argument

A. The rejection made under § 101 should be affirmed.

Appellant argues that claim 57 is directed to statutory subject matter because the "determining" step, which requires the use of a computer, is not an insignificant step. Brief, 14. The particular limitation's language requires: "determining, by a computer, geographic and airline constraints derived from available fares to control the manner in which flights are combined prior to evaluation of fare rules." As such, the claim merely requires a computer for determining constraints derived from available fares. Even if the intended use of the step (i.e., to combine flights) may be a critical feature, the computer is only required for determining the constraints, which is deemed to be an insignificant pre-solution data gathering step. Further, while Appellant notes that a computer is used in the disclosure to generate the itineraries, this is not recited in the claim. Examiner's position is not that all steps must be tied to a machine as alleged in the Appeal Brief (page 15), only the significant and critical steps of the invention. Finally, while the preamble sets forth that the process is intended to be "computer-implemented," the steps recited in the body can stand on their own and the language of

the preamble does not require any particular device to perform the steps. Accordingly, as the claims do not pass the machine-or-transformation test and appear directed to an abstract idea, the rejection of claims 57-62 and 68-76 as directed to non-statutory subject matter should be sustained.

B. The rejections made under § 112, second paragraph, should be affirmed.

Appellant argues that claim 21 is not indefinite because the disputed limitations use the phrase sequences of flights "in two separate features of claim 21." Brief, 16. Appellant attempts to differentiate determining constraints "on" flights and determining constraints "from" flights but does not explain how they differ. Appellant additionally states that in the second recitation the sequences are generated based on the determined constraints. However, the two recited sequences are not distinguished from one another and appear to be referencing the same set of sequences. The language used to draft the claim appears use sequences of flights to determine constraints, and then use these same constraints to select the same sequences of flights. As this language is confusing, it does not adequately apprise the public as to what would constitute infringement of the claimed invention and the rejection for indefiniteness should be sustained.

With respect to claim 40, Appellant argues that "the additional itineraries generated without considering the constraints and with considering the constraints" has proper antecedent basis in the claims. Brief, 17. The grammatical structure of the phrase appears to reference additional itineraries generated without considering the constraints and additional itineraries generated with considering the constraints. While the former has antecedent basis in the claim, the latter does not. Moreover, the language requires pricing a particular set of "additional itineraries" with a definite article that are simultaneously generated with and without considering the same constraints. This is also confusing and prevents ascertaining the scope of the claim. Accordingly, the rejections made under § 112, second paragraph, should be sustained.

C. DeMarcken properly anticipates the claims rejected under § 102(b).

Appellant argues that DeMarcken does not disclose determining constraints on flights derived from fares between the end points of the trip segments. Brief, 18. As a threshold matter, Appellant does not offer any preferred construction as to what would constitute a "constraint" within the meaning of the claims. During examination the USPTO must give claims their broadest reasonable interpretation in light of the specification. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1369, 70 USPQ2d 1827, 1834 (Fed. Cir. 2004). The plain meaning of a "constraint" on flights is anything that restricts the flights in any way. The disclosure gives examples of "constraints" such as routing, time, origin, destination, etc. (see, e.g., ¶ 0028 of the published application). Fare rules themselves can also apply constraints to sequences of flights (¶ 0086 of the published application). In DeMarcken, these constraints are derived from the fares, as required by the claims and shown in the rejections above (see col. 9, lines 61-67 describing routing restrictions derived from fares; see also cols. 17-18 generally describing constraints and restrictions on flights). The constraints are subsequently used to generate the itineraries for the initial user query in the same manner.

Appellant argues that "[t]hese portions of de Marcken, however, describe the faring process that in turn is clearly described to operate on itineraries that were previously provided from a scheduler process 16." Brief, 19. Simply because DeMarcken teaches the decomposition into faring atoms as described by Appellant, the conclusion does not follow that it fails to teach the broadly claimed "determining constraints." The claims do not exclude in any way this faring process or any previous operations on the flights, and accordingly read on the disclosure provided in DeMarcken. Moreover, this is a distinction without a difference, because in DeMarcken "faring atoms refer to a sequence of flight segments ..." (col. 9, lines 27-28). After decomposition, these sequences of flights are used in DeMarcken to generate final itineraries (see cols. 10 and 61), thus meeting the required limitations.

In addition to arguing an overly narrow definition of what can and cannot be considered a "constraint," Appellant similarly does so with claim terms such as "flight"

and "itinerary." Appellant attempts to differentiate DeMarcken from the claimed invention by asserting that "this passage from de Marcken deals with selecting itineraries to pair with different segments of a trip (e.g., return and outbound itineraries), not selecting flights to include in itineraries as recited in the claim." Brief, 19. This alleged difference is specious, and Examiner maintains that the claimed flights and itineraries are no different from the flights and itineraries disclosed by DeMarcken.

With respect to claims 22 et al., Appellant argues that the constraints in DeMarcken are not on flights. Brief, 20. Examiner maintains that the constraints in DeMarcken are plainly "on flights," as the term "constraint" is being interpreted in accordance with the Specification (see above).

With respect to claims 51 et al., Appellant argues that DeMarcken does not disclose generating itineraries using the constraints, but does not explain why this is the case. Brief, 20. Examiner maintains that DeMarcken fully discloses this feature in the manner shown above. Additionally, Appellant argues that DeMarcken does not disclose that constraints are derived from available fares, but rather teaches constructing priceable units from fare components. Brief, 20. However, Appellant does not offer any preferred construction of the claimed limitation that would exclude even Appellant's characterization of the cited art. User constraints such as destination are derived from queries before evaluation of fare rules. Restrictions on fares that can only be used at certain times and for certain destinations and routings are also "constraints" that are derived before rules are tested. Fare rules themselves can also be considered "constraints" (§ 0086 of the published application), as they limit the way itineraries can be constructed. In DeMarcken, these constraints are derived and identified from the applicable fares before they are applied (and indeed, must be derived in order to subsequently apply them) to generate final sequences of flights for a trip (see citations above addressing the independent claims). Thus, DeMarcken fully discloses the requirement that they are derived "prior to evaluation of fare rules."

With respect to claims 63 et al., Appellant argues that DeMarcken fails to disclose "a diverse set of fares." Brief, 21. Examiner interprets claimed diversity in

accordance with its broadest reasonable interpretation in light of the Specification to merely require that the set of fares is not homogeneous, which is taught by DeMarcken in the manner shown above.

The rejections under § 103(a) are not argued on their own merits and should also be affirmed for the reasons stated above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/DANIEL VETTER/
EXAMINER 3628

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